SUMMARY OF FE-19-02
SELECTED AND POSSIBLE CONTRIBUTING FACTORS

SELECTED FACTORS

Railroad: Cleveland Works Railway Company
(formerly River Terminal Railway)
Location: Cleveland, Ohio
Region: 2

Month: August
Date: Aug. 8, 2002
Time: 4:15 a.m., EST

Data for All Fatally Injured Employee(s)

Conductor
53 years old
34 years of service
Last rules training: Nov. 19, 2001
Last safety training: Nov. 19, 2001
Last physical: Oct. 8, 1986

Data for All Employees (Craft, Positions, Activity)

Craft: Transportation and Engine

Positions:

Switching Crew
Locomotive Engineer
Conductor

Yard Master
Train Master

Activity: Switching

EVENT

A Conductor, who had been riding on the leading end of the lead car (gondola car), was fatally injured when crushed between the gondola car and a standing ladle car on an adjacent track as he was attempting to dismount.

SUMMARY FOR FE-19-02 CONTINUED

POSSIBLE CONTRIBUTING FACTORS

PCF No. 1

According to the railroad's operating rules, the train crew should not have passed the ladle cars before stopping the movement and checking for proper clearance. The Engineer should have resumed movement only after receiving and acknowledging the Conductor's signal to do so. The train crew acted in non-compliance with the railroad's operating rules.

PCF No. 2

The Conductor used poor judgment in attempting to dismount moving equipment when it was not clear that proper clearance was available. A re-enactment revealed that the Conductor could have exited the west side of the No. 8 Track instead and benefitted from better lighting and ground conditions, thereby dismounting more easily and safely.

PCF No. 3

At 4:15 a.m., it was dark, and artificial lighting at the accident site was not adequate.

PCF No. 4

The train crew was not informed about the additional ladle cars having been placed on the track, which caused an additional clearance issue.

REPORT: **FE-19-2002**

RAILROAD: Cleveland Works Railway Company (CWRO)
(Formerly River Terminal Railway)

LOCATION: Cleveland, Ohio

DATE & TIME: Aug. 8, 2002; 4:15 a.m., EST

EVENT[1]: A Conductor, who had been riding on the leading end of the lead car (gondola car), was fatally injured when crushed between the gondola car and a standing ladle car on an adjacent track as he was attempting to dismount.

EMPLOYEE:

Craft:	Transportation and Engine (T&E)
Activity:	Switching
Occupation:	Conductor
Age:	53 years
Length of Service:	34 years
Last Rules Training:	Nov. 19, 2001
Last Safety Training:	Nov. 19, 2001
Last Physical:	Oct. 8, 1986

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On Aug. 7, 2002, at 11 p.m., a crew comprising a Locomotive Engineer and a Conductor reported for duty at the CWRO Clark Avenue Yard Office in Cleveland, Ohio. The crew had completed their statutory off-duty period. They were assigned to operate local switch Train No. 324. The primary purpose of this assignment was to service the International Steel Group (ISG) facility, also located in Cleveland, Ohio. ISG maintained an extensive internal rail service at this location, as part of the steel-making process.

The crew involved received their initial switching instructions from the CWRO Yard Master. At approximately 11:10 p.m., the train crew members proceeded to their assigned locomotive. The Engineer made the required locomotive inspection. They established radio contact and

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[1] "Event is defined as "occurrence that immediately precedes and directly results in the fatality." Possible contributing factors are identified in the following report and attached summary.

performed a frequency check on both the Yard Master's channel and their assigned channel that would be used during switching operations. The Conductor entered the locomotive cab, and the Engineer operated the single locomotive with no cars to Island Yard. Here, they placed 12 cars on the scale track. After these were weighed, they switched three cars and spotted them at the Sunoco Oil facility. The crew then operated the light locomotive and coupled to 12 hopper cars loaded with coke. With the Conductor riding the lead end of the movement, the crew shoved these cars into the foundry. The Conductor walked to the first car, uncoupled the locomotive, and boarded the footboard of the locomotive. The crew members then returned to the yard office for their scheduled break.

At approximately 3:15 a.m., the crew returned to the locomotive and operated light to the scrap yard. Both crew members were riding in the locomotive cab. The Engineer was positioned at the controls of the locomotive on the west side, and the Conductor was seated in the Conductor's seat on the east side**.** At the Basic Oxygen Furnace (BOF) Plant, while operating north and toward the Scrap Yard, on Track No. 8, the crew passed a string of unattended ladle cars (the number unknown) located on Track No. 9. At the scrap yard, the crew members switched out five empty gondola cars. They returned to Island Yard, set out the empty cars, and coupled to five gondola cars loaded with scrap. The air brakes on the cars had been bled off.

As the movement passed the switch leading to the BOF, the Conductor dismounted the locomotive. Due to the curvature of the track, the Engineer could not initially see the Conductor. When the rear car was west of the switch, the Conductor radioed for the Engineer to begin shoving northward into the facility. Before the locomotive had proceeded two engine lengths, the Conductor boarded the north end of the lead car. At this time, from the position within the cab, at the controls on the west side of the locomotive, the Engineer observed the Conductor riding the north end of the lead car. He was visible from the chest up and standing approximately in the middle of the first car's lead end.

At the accident site, Track No. 9 was located to the east of Track No. 8. Both were tangent with a 12-foot, 1 1/4-inch track center and were level and equal at grade. A paved area, 12 foot in width, paralleled the west side of Track No 8. The area was illuminated by five 1,000 watt electric light fixtures which were mounted 30 feet high on the Mold Yard Building, adjacent to the paved area.

The sky was dark and clear, and the temperature was 65º F.

THE ACCIDENT

At approximately 4:15 a.m., operating in the No. 2 throttle position and at a slow speed, the lead car began to pass the unattended ladle cars standing on Track No. 9. The Engineer reduced to the No. 2 throttle position. He observed the Conductor moving toward the northeast corner of the lead rail car's end. As the lead car continued past the adjacent ladle cars, the Engineer observed the Conductor transfer to the side ladder of the lead car. It was at this time that the Engineer witnessed the Conductor beginning to roll between the upper portions of the cars and drop to the ground.

Immediately, the Engineer throttled-off, applied the full independent air brake, and radioed to the Yard Master, "Get the Train Master; we have a man down." The Engineer dismounted the locomotive and "ran" to the site, calling the Conductor's name. He responded, "I'm over here."

At approximately 4:20 a.m., the Train Master arrived and radioed to the Yard Master to "get an ambulance." The Conductor was lying on the ground between the two tracks and remained conscious. The Train Master instructed the Engineer to "go to the roadway and guide the ambulance in." Crew members from a second train were instructed to uncouple the rail cars to provide immediate access for the emergency responders.

The Cleveland Fire Department and the Cleveland Emergency Medical Squad arrived at 4:33 a.m. The initial diagnosis by the Emergency Medical Technicians was trauma due to an open pelvic area and arm injury. Dressings and a collar were applied to the Conductor. He was placed on a board and transported to Cleveland Metro Hospital. They arrived at the emergency room at 4:56 a.m. He was pronounced dead by the attending physicians at 5:32 a.m.

POST-ACCIDENT INVESTIGATION

The ladle cars used to transport molten were captive. They were neither part of the general system nor regulated by 49 CFR Part 231, Railroad Safety Appliance Standards. Job No. 234 comprised an SW locomotive and five gondolas loaded with scrap, totaling 500 tons. The estimated length was 350 feet.

On Aug. 8, 2002 at 7:40 a.m., the CWRO Mechanical Supervisor conducted an inspection of the specific ladle cars involved. There were no defects noted to the brake system, safety appliances, or general condition of the equipment. The gondola car was inspected at 7:55 a.m. There were no defects regarding the brake equipment and safety appliances. The cutting lever was found to be bent, and the over-all general condition was noted as "fair." The locomotive inspection results indicated that there were no defects regarding throttle operation, braking equipment, or safety appliances. The general condition was noted as "good."

The FRA inspection revealed that the locomotive calendar day inspection card had been completed by the Locomotive Engineer at 11 p.m. on Aug. 7, 2002. There were no defects noted. The periodic inspection and repair record was completed on June 14, 2002. No defects were noted. Carrier records indicated the gondola car was received in transfer from the Norfolk Southern Corporation on Aug. 6, 2002. The CWRO mechanical department performed an inspection. No defects were noted. On Aug. 9, 2002 , an FRA Motive Power and Equipment inspection was conducted to determine if the car was in compliance with 49 CFR Part 231.2 (hopper cars and high side gondolas with fixed ends). Inspection findings revealed that the top side and end ladder treads on the gondola were located approximately 10 ½ inches from the top of the car. The dimensions were 6 ½ inches greater than the 4 inches maximum distance required by Part 231.2(d)(2). No other defects were noted. The extreme width of the gondola car was measured at 11 feet, 2 inches. The extreme width of the ladle car was measured at 12 feet, 4 inches. These dimensions indicated that during the train movement, the clearance between the two rail cars was approximately 4 and 1/4 inches.

The Locomotive Engineer was the sole witness. Based on his statement, and under the observation of FRA investigators, the Carrier conducted a re-enactment on Aug. 20, 2002. The exact locomotive, gondola, and ladle cars were used. This disclosed that during the shoving movement, the Engineer would have been able to observe the Conductor continuously. His recollection that the Conductor had been riding on the leading end of the lead car and near the center indicated that the "B" end of the car was northward. This would place the Conductor on the brake platform and in a position to be visible to the Engineer. Had the "A" end of the car been northward, the Conductor would have been riding on the end ladder. This would have placed him on the extreme right side of the car's end, as observed by the Engineer. As the re-enacted movement proceeded past three ladle cars, the movement was stopped. At this point, the distance between the leading end of the gondola car and the ladle car was six inches or less. Due to the insufficient clearance, the Conductor was pinned between the two cars. The investigators could not determine why the Conductor had opted to dismount at this particular location, as the west side of the No. 8 Track had considerably better lighting, and the ground surface would have accommodated more easily dismounting moving equipment. It was noted that the ISG personnel had placed the ladle cars on Track No. 9, using a track mobile. With this in mind, investigators believed that the Conductor had passed only three ladle cars on the crew's prior movement to the scrap yard. The remaining two cars could have been placed by ISG personnel after this movement and prior to the second movement. There were no records to indicate their time of placement. On Aug. 8, 2002, an OSHA Investigator determined that their agency had no jurisdiction to conduct an investigation.

The Cuyahoga County Coroner's Office relied on FRA's initial report to complete its reports. The results of FRA's post-accident toxicological test for the Conductor were negative. Railroad officials had determined the Engineer did not contribute to the cause of the accident and therefore did not require that he participate in post-accident testing.

APPLICABLE RULES

The Terminal Railway Company
Revised Rules Governing Employees
Effective: October 01, 1997

General Rules

8. Employees must exercise care to avoid injury to themselves and others. They must expect movements at any time, on any track, in any direction. They must acquaint themselves with the location of structures or obstructions where clearances are close, and wear protective clothing and equipment as instructed and required. Employees who engage in unsafe practices to the jeopardy of themselves or others will be subject to discipline.

Movement of Traffic

61. When conditions require, employees must ride on moving equipment in a manner that will provide them with complete protection and place them in position to immediately give signals to other members of the crew, as necessary, and otherwise protect the movement. To protect the rear end of moving equipment that cannot be ridden, employees must walk ahead of movements to operate sirens as required to give warning that a switch is being made.

111. Before getting on or off moving equipment, face the equipment and have a secure handhold and footing, look in the direction the equipment is moving to avoid being struck by switch stands or other objects. Before getting off, look in both directions for equipment moving on adjacent tracks. Look out for ground irregularities or coal, coke, or stone, boards and other material likely to cause falling, slipping, tripping or turning an ankle. Slippery conditions underfoot call for special care.

115. Getting on moving equipment:

(b) Ride past all side obstructions.

(f) be alert for all movements on adjacent tracks.

116. Ride the side ladder on the leading end of the car when possible. Look forward and stay close to the side of the car. Be alert to the conditions in the area.

117. Maintain firm hand and foot holds to avoid falling or being dislodged in case of a sudden stop. Look forward and avoid being struck by equipment on an adjacent track or by any obstruction.

123. Watch for clearance of equipment on adjacent tracks. If in doubt about the clearance, stop the movement and check for proper clearance before giving the signal to resume movement.

124. Extreme caution must be used by employees to prevent injury to themselves or others when locomotives or cars are passing under overhead wires or structures, or where clearances are limited.